International Journal of Education, Information Technology and Others (IJEIT), August 2023, 6 (3), 476-486
DOI: https://doi.org/10.5281/zenodo.10076840
p-ISSN: 2654-2528 e-ISSN: 2623-2324
Accredited by Directorate General of Strengthening for Research and Development
Available online at https://jurnal.peneliti.net/index.php/IJEIT

Analysis of Teacher Creativity Enhancement: The Role of Teacher Involvement in the Creative Process

Cynthia Petra Haumahu[1*], Criezta Korlefura[2], Kevin Hermanto Tupamahu[3]

[1,2]Guidance and Counseling Department, Faculty of Teacher Training and Education, Pattimura University
[3]Accounting education Department, Faculty of Teacher Training and Education, Pattimura University

Received: 21 Juni 2023
Revised: 10 July 2023
Accepted: 19 July 2023

Abstract

Teacher creativity has become an indispensable requirement for survival and competitiveness in today's education world. Responding to this emergency situation, current research is focused on investigating the effect of teachers' involvement in the creative process on their creativity. The target population of this research is teachers in Ambon City, and structural equation modeling is used to test the theoretical model and the proposed hypotheses. The results of the study show that involvement in the creative process which consists of identifying problems, seeking information and generating ideas has a positive and significant effect on increasing teacher creativity. These findings suggest that creativity can be enhanced if a teacher is willing to spend the necessary time and effort to thoroughly identify an issue, seek extensive information, and generate many ideas from different perspectives i.e., engage in an effective creative process.

Keywords: Teacher Involvement in creative process, Teacher creativity

(*) Corresponding Author: petrahaumahu@gmail.com

How to Cite: Haumahu, C. P., Korlefura, C., & Tupamahu, K. (2023). Analysis of Teacher Creativity Enhancement: The Role of Teacher Involvement in the Creative Process. *International Journal of Education, Information Technology, and Others*, *6*(3), 476-486. https://doi.org/10.5281/zenodo.10076840

INTRODUCTION

In the era of the industrial revolution 4.0, teachers were required to be able to develop themselves from a professional and pedagogical aspect in order to increase the effectiveness of teaching to students. To achieve this, teacher creativity becomes a very important aspect, in line with the demands of learning in the 21st century, namely communication, critical thinking & problem solving, collaboration, and creativity & innovation (Jules and Sundberg, 2018). However, most national education systems are isolated from this process, reducing teachers' efforts to develop creativity, despite the consistent practical need to prepare students for a changing professional environment (Craft, 2003). Rubenstein et al (2013) also stated that teachers are uniquely prepared to provide instruction to facilitate this development, but many factors can hinder the teacher's capacity to develop creativity.

This research views the need for more attention to factors that have high potential in influencing creativity in the teaching process, namely involvement in the creative process. Engagement in the creative process is defined as the teacher's involvement in cognitive processes relevant to creativity, including problem identification, information search and coding, and ideas and alternative search

(Amabile, 1983; Reiter-Palmon and Illies, 2004). Rubenstein et al (2018) stated that explicitly modelling and teaching that emerge from a creative process may be a promising area for inspiring the development of creativity. They further revealed that involvement in the creative process will give birth to process skills, thinking, making, generating ideas, improvising, thinking outside the box so that they are able to do something or think about things in a new or different way. Previous researchers have also emphasized the value of understanding the creative process through which individuals come to develop creative ideas, and they have called for more research to focus on this issue (e.g., Zang and Bartol, 2010a; Yi et al, 2015). However, this aspect has received far less attention in the literature than teacher personal characteristics (Rubenstein et al, 2018). Even though the ability of teachers to increase their creativity so that they can teach well is very dependent on their own desire and ability to be creative (Patston et al, 2018). To be effective teachers with creativity, teachers must develop their own skills in creativity. Therefore, teachers should be personally encouraged to develop and exercise their own creativity within their profession. In considering this aspect of teacher behavior, in this study involvement in the creative process is seen as a very important variable that can increase teacher creativity in teaching.

Previous research on creativity was essentially carried out to identify factors that facilitate and hinder the development and increase of teacher creativity (e.g., Paek & Sumners, 2017; Khodabakhshzadeh et al, 2018; Rubenstein et al, 2018; Patston et al, 2018; Arifani and Suryanti, 2019; Gajda et al., 2017; Henriksen et al., 2018; Ellis and Childs, 2019; Brereton and Kita, 2020). However, none of these studies fully examine how the impact of teacher involvement factors in the creative process is seen as an important factor in increasing teacher creativity (see: Patston et al, 208; Rubentsein et al, 2018). Research conducted outside the educational environment (e.g., Zang and Bartol, 2010a; Zang and Bartol 2010b; Henker et al., 2015; Tan et al., 2019; Cheung et al., 2020; Khan and Abbas, 2022; Hu et al., 2022) also shows that involvement in the creative process is one of the key factors in increasing individual creativity at work. Based on this description, as a continuation of creativity research in the field of education, this research is focused on how the impact of aspects of teacher involvement in the creative process on the development of teacher creativity.

METHOD

The population in this study were teachers at schools in the city of Ambon. The total teacher population in the city of Ambon is 1234 teachers consisting of 918 public school teachers and 316 private school teachers (Data From Ambon City Statistics Center, 2021). The sample selection in this study used a random sampling method where each member of the population has the same opportunity to be used as a sample. This study uses a questionnaire survey technique to collect data. The number of samples used in this study refers to the minimum sample required in the use of SEM analysis. SEM analysis requires at least 5 times the number of parameter variables to be analyzed (Ferdinand, 2014). The number of parameter variables to be estimated based on the structural equation model built in this study is 31 parameters. Based on the number of these parameters, the number of samples needed in the analysis is 5 x 31 or 155 teachers.

The research questionnaire was distributed in 2 ways, directly and via WhatsApp in the form of a Google form as many as 200 questionnaires. The process of returning the questionnaire that has been filled in by the respondent is as follows. First, the questionnaires that have been distributed directly were picked up directly by the researcher. The number of teachers who sent back the questionnaire directly was 69 people. Second, the questionnaire was sent via WhatsApp in the form of a Google form and received responses from 41 teachers filling out the questionnaire. The total number of teachers who responded was 110 teachers. Although the number of samples did not reach the requirements based on the comparison of the number of parameters, the number of samples of 110 teacher respondents was considered sufficient to be used in data analysis. This number also corresponds to the minimum sample requirements needed for data processing using structural equation model analysis with the maximum likelihood technique using AMOS 24 software, which is between 100 and 200 (Ghozali, 2017).

For the measurement of research variables, the first is teacher involvement in the creative process (TICP) which is the teacher's involvement in cognitive processes that are relevant to creativity. The measurement model for the construct of involvement in the creative process uses a second-order model consisting of three dimensions (1) problem identification, (2) information search and coding, and (3) ideas and alternative generation (Amabile, 1983; Reiter-Palmon & Illies, 2004). The instrument used in measuring involvement in the creative process consists of eleven question items using a Likert scale of 1 to 5 (1 "never", 2 "rarely", 3" sometimes", 4 "often", 5 "very often"). Second, Teacher Creativity (TC) which is the ability that a teacher must have to produce something new in the form of ideas or methods in teaching that are different from before. In this study the instrument for measuring teacher creativity in teaching consisted of eight question items modified from Zhou and George (2001). Respondents will be asked to answer the question whether the respondent has done creative things in the pursuit process which is measured using a Likert Scale 1 to 5 (1 "strongly disagree", 2 "disagree", 3 "undecided", 4 " agree", 5 "Strongly agree").

RESULT AND DISCUSSION

a. Characteristics of Respondents

The characteristics of the 110 teachers who responded to the questionnaire in this study are presented in Table 1. which consisted of information on gender, school category (elementary school, junior high school, and senior high school), and field of study of the teacher who answered the research questionnaire.

Table 1. Characteristics of Respondents

Characteristics		Jumlah	Percentage
Gender			
-	Male	42	38,18%
-	Female	68	61,82%
Jumlah		110	100%
Age			
-	< 30 years	7	6,36%
-	30 – 40 years	66	60,00%

-	40 – 50 years	34	30,91%
-	> 50 years	3	2,73%
Jumlah		110	100%
School category			
-	Elementary School	11	10%
-	Junor High School	32	29,09%
-	Senior High School	48	43,64%
-	Vocational School	19	17,27%
Jumlah		110	100%
Formal Education			
-	Bachelor Degree	98	89,09%
-	Master Degree	12	10,91%
Jumlah		110	100%

b. Non-Response Bias Analysis

This non-response bias test uses a statistical test independent sample t-test to see that the average score for each research variable has no difference between the two groups of respondents. If the test results show a significant value at 0.05 ($p < 0.05$) then there is a bias in the research data which means there is a difference between the two groups of respondents, otherwise if it is not significant at 0.05 ($p > 0.05$) then it is not there is bias in the research data, which means that there is no difference between the two groups of respondents. The results of the non-response bias test are presented in table 4.2 below.

Table 2. Non-Response Bias Analysis Result

	Respondents	N	Mean	Std. Dev	Std. Error Mean	Sig.
PI	Early respondents	73	10.42	2.362	0.277	0.105
	Late respondents	32	9.68	2.082	0.342	
IS	Early respondents	73	8.58	2.958	0.346	0.405
	Late respondents	32	9.05	2.571	0.423	
IG	Early respondents	37	18.12	4.206	0.492	0.932
	Late respondents	32	18.05	3.582	0.589	
TC	Early respondents	78	51.84	6.294	0.737	0.933
	Late respondents	32	51.73	6.067	0.997	

Based on the results of the non-response bias test output in table 4.2 above, it shows that there is no difference in the answers between the initial respondents and also the final respondents as indicated by the value of each construct which is not significant at 0.05. Thus it can be concluded that there is no bias in the research data so that it can be continued for the next stage of testing.

c. Confirmatory Factor Analysis/CFA

Confirmatory factor analysis (CFA) was performed using the AMOS 24 program to evaluate the construct measurement model, using the maximum likelihood estimation method. It is a two-step modelling approach that first evaluates a measurement model without structural paths to ensure its fit and then evaluates the full structural model (Hair et al., 2010). The measurement model is evaluated using X2 and the ratio of X2 to degrees of freedom; Root Mean Square Error of

Approximation (RMSEA); Incremental Fit Index (IFI); Tucker-Lewis Index (TLI); Comparative Fit Index (CFI); and Akaike Information Criterion (AIC) (Ghozali, 2017).

The results showed that even though X2 was significant (p <0.001), the value of X2 to the degrees of freedom (chi-square ratio) was less than 2, and the other fit index values were more than acceptable (see Table 4.3). Table 4.3. shows that all factors show good convergent validity, because all standardized coefficients are very significant at p <0.000 with a loading factor above 0.50 (Bagozzi and Yi, 1988), and the AVE is above 0.50 and the composite reliability is far below over 0.70.

Table 3. CFA, AVE, reliabilitas komposit, and cronbach's *a*

Indikator konstruk	Standardized loadings	*t*-value (all significant to p <0.001)	AVE	Composite Reliability	cronbach's *a*
Problem Identification (PI)			0,460	0,717	0,705
ticp1	0,715	a			
ticp2	0,716	5,267			
ticp3	0,598	4,713			
Information Searching (IS)			0,833	0,937	0,931
ticp4	0,883	a			
ticp5	0,946	14,905			
ticp6	0,909	14,246			
Idea Generation (IG)			0,580	0,872	0,863
ticp7	0,849	a			
ticp8	0,754	9,005			
ticp9	0,682	7,650			
ticp10	0,840	9,988			
ticp11	0,667	7,714			
Teaher Creativity (TC)			0,562	0,817	0,877
tc1	0,725	a			
tc2	0,871	9,099			
tc3	0,779	7,959			
tc4	0,857	8,778			
tc5	0,722	7,243			
tc6	0,681	6,762			
tc7	0,757	7,539			
tc8	0,563	5,687			

Notes: n = 110 measurement models are estimate using maximum likelihood.
Model fit indices: Chi-square, 577.637; degree of freedom, 406; p-value, 0.000; chi-square ratio, 1.423; IFI, 0.928; TLI, 0.916; CFI, 0.927; RMSEA, 0.062; AIC, 757.637 (saturated model, 992.000).
"a" indicate that parameter was fixed at 1.0.

d. Assessment of the feasibility of the Second-Order Model for the Construct of Teacher Involvement in the Creative Process

Referring to the testing procedure of Tanriverdi and Venkatraman (2005), in assessing the feasibility of the second order model in explaining all variations in the dimensions of the variables studied, the first order

measurement model in which each dimension of psychological empowerment and involvement in the creative process is correlated will be compared. with a second order measurement model to assess the existence of a second order management control mechanism model and to ensure the multidimensional, construct validity, and convergent validity of the second order model. The target coefficient statistic in determining the feasibility of the second order model was developed by Marsh and Hocevar (1985), which is the X2 ratio of the second order model. The target coefficient has an upper limit of 1.0 and the presence of second order factors will be strongly supported when the target coefficient approaches one (Marsh and Hocevar, 1985).

Based on the results of statistical testing, it shows that the target coefficient value of the second order construct of involvement in the creative process is 1, which indicates that the second order factor of involvement in the creative process (TICP) explains 100% of the relationship between the first order factors (Problem Identification (PI), Information Searching (IS), and Idea Generation (IG)). Furthermore, all factor loadings of the second order constructs were highly significant ($p < 0.001$), giving further acceptability of the second order model for the engagement construct in the creative process. Overall, these results support the existence, multidimensional, convergent validity and discriminant validity, and construct reliability of the second-order variable involvement in the creative process (see Table 4).

Table 4. Assessment of the Second-Order Model for the Construction of Teacher Involvement in the Creative Process (TICP).

Panel A: fit index for first-order dan second-order measurement model		
Fit indices	Model Pengukuran konstruk *First-order*	Model Pengukuran kontruk *Second-order*
X^2	79,424	79,424
Degree of freedom	41	41
X^2 degrees of freedom	1,937	1,937
RMSEA	0,093	0,093
TLI	0,928	0,928
CFI	0,946	0,946
IFI	0,947	0,947
AIC (default model/saturated model)	129,424/132,000	129,424/132,000
Target statistic: 1 (79,424/79,424)		

Panel B: loading factor for TICP second order measurement model				
Hubungan			*Standardized coefficient*	*t-value* (***signifikan pada p < 0.001)
PI	<---	TICP	0,637	4,315***
IS	<---	TICP	0,644	5,821***
IG	<---	TICP	0,997	7,423***

e. Hypothesis Testing Results

Before assessing the path coefficients, the fit of the structural equation model must be evaluated. As shown in Table 4.7, the goodness of fit

evaluation results statistically indicate good data fit. Although the chi-squared value is significant, the chi-squared ratio shows a value of 1.424 which is below the two which indicates acceptance of the fit. For other fit model sizes (IFI, TLI, CFI) showed an acceptable fit with values above 0.90. RMSEA does not exceed the acceptable fit value of 0.08 and the parsimony value shown by AIC is lower than the saturated model.

The results of statistical hypothesis testing in this study are shown in table 4 indicating that the second-order model which represents 3 dimensions of involvement in the creative process shows a positive and significant influence on teacher creativity in teaching (standardized coefficient: 0.218, p <0.05), where this provides support for the hypothesis of this study. These results indicate that involvement in the creative process which consists of identifying problems, seeking information and generating ideas has a significant effect on increasing teacher creativity.

Table 5. Hypothesis Testing Results

Pengaruh			Hipotesis	Standardized coefficient	t-value
TICP	**→**	**TC**	**H**	**0.218****	**2,074**

Note: n = 110
Measurement model estimated use *maximum likelihood* method
Fit index model: Chi-square, 603.769; degree of freedom, 424; p-value, 0.000; chi-square ratio, 1.424; IFI, 0.924; TLI, 0.916; CFI, 0.923; RMSEA, 0.062; AIC, 747,769 (saturated model, 992.000).
***significant at the $p < 0.01$ level; **significant at the $p < 0.05$ level; *significant at the $p < 0.10$ level

DISCUSSION

This research contributes to the creativity literature in education by demonstrating the importance of teacher involvement in the creative process in increasing teacher creativity in teaching activities. More specifically, some creativity research in education field (e.g., Gajda et al., 2017; Henriksen et al., 2018; Ellis and Childs, 2019; Brereton and Kita, 2020) have pointed to the importance of allocating greater research attention to the creative process itself if understanding how creative results are to be achieved is to be achieved. However, there has been no previous research in the field of education that has specifically looked at the potential relationship between teacher involvement in the creative process and teacher creativity. The current research develops creativity literature by including teacher involvement in the creative process as a broader construction that not only includes the process of forming ideas and alternatives, but also includes two other creative processes, namely the process of identifying problems and the process of seeking information.

The results of statistical testing show that the second order model of involvement in the creative process which consists of identifying problems, seeking information and generating ideas has a positive and significant influence on

increasing teacher creativity. These findings suggest that creativity can be enhanced if a teacher is willing to spend the necessary time and effort to thoroughly identify an issue, seek extensive information, and generate many ideas from different perspectives i.e., engage in an effective creative process. These results are in line with previous research conducted in the field of psychology and organizational management which has proven that involvement in the creative process will have a positive impact on increasing individual creativity (e.g., Zang and Bartol, 2010a; Zang and Bartol 2010b; Henker et al., 2015; Tan et al., 2019; Cheung et al., 2020; Khan and Abbas, 2022; Hu et al., 2022).

Involvement in this creative process shows that teachers are actively involved in cognitive processes relevant to creativity, such as problem identification, environmental mapping, data collection, creating and evaluating solutions, and implementing solutions (Amabile, 1983; Shalley, 1991; Reiter-Palmon & Illies , 2004). Simple solutions that may not be novel or useful may emerge when the teacher is only minimally involved in the process, but when a teacher exerts effort to identify the problem more fully, obtain as much information as possible, and generate many new and useful ideas and alternatives, solutions. most likely to be generated. This creative process "determines flexibility by exploring cognitive pathways, paying attention to certain aspects of a task, and the extent to which certain paths are followed in pursuit of solutions" (Amabile et al., 1996: 95). If this cognitive process is disrupted, then important information will not be accessed or used in problem solving, resulting in low creativity as a result (Shalley, 1995). Therefore, all series in the creative process are a unit that cannot be separated from one another in order to increase teacher creativity.

However, like other studies, this study has some limitations. First, this research only focuses on the impact of involvement in the creative process on increasing teacher creativity considering other factors (e.g., teacher empowerment or organizational culture factors) that can contribute to strengthening the causal relationships of the variables in this study. Second, data from the main construct in the study were collected based on self-reports from teachers, who possible common source bias. But because these constructs (involvement in the creative process and teacher creativity) are related to the internal state of the teacher, so in this study it is assumed that it is logical to collect data with self-ratings. future research might be able to use superiors' judgments to minimize the possibility of bias. Third, the study sample was too small so it might not fully represent the school population in Ambon city. Finally, this study is based on cross-sectional data. Although the results provide evidence of a statistically significant effect supported by the underlying theory, they are not sufficiently strong evidence of a causal relationship between variables. Subsequent research using other methods can further strengthen the evidence about the causal relationship between variables.

CONCLUSION

Teacher involvement in the creative process is an aspect of teacher behavior that can increase the teacher's capacity and sensitivity to be able to improve analysis in identifying learning problems and finding solutions and seeking new information that is useful for him in creating creative ideas to support his teaching assignments. The results of this study can be used as a reference for schools to encourage teachers

to be actively involved in every process that can support the creation of new creative ideas in learning. High motivation increases engagement in creativity-related activities, which, in turn, increases creativity self-assessment. These findings not only shed light on the mechanisms underlying the open-creativity linkage but also highlight the importance of intrinsic motivation and the involvement of the creative process in this linkage. Together, these studies expand on the influence of personality traits on creativity and offer new directions for future study. For further research on the same topic, one can explore and investigate more broadly and deeply about other factors that can influence teacher creativity.

REFERENCES

Amabile, T. M. (1983). The social psychology of creativity: A componential conceptualization. *Journal of personality and social psychology*, *45*(2), 357.

Amabile, T. M., Conti, R., Coon, H., Lazenby, J., & Herron, M. (1996). Assessing the work environment for creativity. *Academy of management journal*, *39*(5), 1154-1184.

Arifani, Y., & Suryanti, S. (2019). The Influence of Male and Female ESP Teachers' Creativity toward Learners' Involvement. *International Journal of Instruction*, *12*(1), 237-250.

Bagozzi, R. P., and Y. Yi. 1988. On the Evaluation of Structural Equation Models. *Journal of the Academy of Marketing Science* 16 (1):074-094.

Brereton, P., & Kita, S. (2020). Exploring teacher creativity through duoethnography and reflection. *Teacher Development Academic Journal*, *1*(1), 7-19.

Cheung, S. Y., Huang, E. G., Chang, S., & Wei, L. (2020). Does being mindful make people more creative at work? The role of creative process engagement and perceived leader humility. *Organizational Behavior and Human Decision Processes*, *159*, 39-48.

Craft, A. (2003). The limits to creativity in education: Dilemmas for the educator. *British journal of educational studies*, *51*(2), 113-127.

Ellis, V., & Childs, A. (2019). Innovation in teacher education: Collective creativity in the development of a teacher education internship. *Teaching and Teacher Education*, *77*, 277-286.

Ferdinand, A. 2014. *METODE PENELITIAN MANAJEMEN: Pedoman Penelitian Untuk Penulisan Skripsi, Tesis, dan Disertasi Ilmu Manajemen*. 5 ed. Semarang: Badan Penerbit Universitas Diponegoro.

Gajda, A., Beghetto, R. A., & Karwowski, M. (2017). Exploring creative learning in the classroom: A multi-method approach. Thinking Skills and Creativity, 24, 250-267.

Ghozali, I. 2017. *MODEL PERSAMAAN STRUKTURAL: Konsep Dan Aplikasi Dengan Program AMOS 24 Update Bayesian SEM Edisi 7*. 7 ed. Semarang: Badan Penerbit Universitas Diponegoro.

Hair, J. F., W. C. Black, B. J. Babin, and R. E. Anderson. 2010. *Multivariate Data Analysis 7/e*. seven ed. New Jersey: Pearson Prentice Hall.

Henker, N., Sonnentag, S., & Unger, D. (2015). Transformational leadership and employee creativity: The mediating role of promotion focus and creative process engagement. *Journal of Business and Psychology*, *30*, 235-247.

Henriksen, D., Henderson, M., Creely, E., Ceretkova, S., Černochová, M., Sendova, E., & Tienken, C. H. (2018). Creativity and technology in education: An international perspective. *Technology, Knowledge and Learning*, *23*(3), 409-424.

Hu, X., Khan, S. M., Huang, S., Abbas, J., Matei, M. C., & Badulescu, D. (2022). Employees' green enterprise motivation and green creative process engagement and their impact on green creative performance. *International Journal of Environmental Research and Public Health*, *19*(10), 5983.

Jules, T., & Sundberg, K. C. (2018). The internationalization of creativity as a learning competence. *Global Education Review*, *5*(1), 35-51.

Khan, S. M., & Abbas, J. (2022). Mindfulness and happiness and their impact on employee creative performance: Mediating role of creative process engagement. *Thinking Skills and Creativity*, *44*, 101027.

Khodabakhshzadeh, H., Hosseinnia, M., Moghadam, H. A., & Ahmadi, F. (2018). EFL Teachers' Creativity and Their Teaching's Effectiveness: A Structural Equation Modelling Approach. *International Journal of Instruction*, *11*(1), 227-238.

Marsh, H. W., & Hocevar, D. (1985). Application of confirmatory factor analysis to the study of self-concept: First-and higher order factor models and their invariance across groups. *Psychological bulletin*, *97*(3), 562.

Paek, S. H., & Sumners, S. E. (2019). The indirect effect of teachers' creative mindsets on teaching creativity. *The Journal of Creative Behavior*, *53*(3), 298-311.

Patston, T. J., Cropley, D. H., Marrone, R. L., & Kaufman, J. C. (2018). Teacher implicit beliefs of creativity: Is there an arts bias? *Teaching and teacher education*, *75*, 366-374.

Yi, X., Plucker, J. A., & Guo, J. (2015). Modeling influences on divergent thinking and artistic creativity. *Thinking Skills and Creativity*, *16*, 62-68.

Reiter-Palmon, R., & Illies, J. J. (2004). Leadership and creativity: Understanding leadership from a creative problem-solving perspective. *The Leadership Quarterly*, *15*(1), 55-77.

Rubenstein, L. D., McCoach, D. B., & Siegle, D. (2013). Teaching for creativity scales: An instrument to examine teachers' perceptions of factors that allow for the teaching of creativity. *Creativity Research Journal*, *25*(3), 324-334.

Rubenstein, L. D., Ridgley, L. M., Callan, G. L., Karami, S., & Ehlinger, J. (2018). How teachers perceive factors that influence creativity development: Applying a Social Cognitive Theory perspective. *Teaching and Teacher Education*, *70*, 100-110.

Shalley, C. E. (1991). Effects of productivity goals, creativity goals, and personal discretion on individual creativity. *Journal of Applied psychology*, *76*(2), 179.

———.. (1995). Effects of coaction, expected evaluation, and goal setting on creativity and productivity. *Academy of Management journal*, *38*(2), 483-503.

Tan, C. S., Lau, X. S., Kung, Y. T., & Kailsan, R. A. L. (2019). Openness to experience enhances creativity: The mediating role of intrinsic motivation

and the creative process engagement. *The Journal of Creative Behavior*, *53*(1), 109-119.

Tanriverdi, H., & Venkatraman, N. (2005). Knowledge relatedness and the performance of multibusiness firms. *Strategic management journal*, *26*(2), 97-119.

Zhang, X., & Bartol, K. M. (2010a). Linking empowering leadership and employee creativity: The influence of psychological empowerment, intrinsic motivation, and creative process engagement. *Academy of management journal*, *53*(1), 107-128.

———. (2010b). The influence of creative process engagement on employee creative performance and overall job performance: A curvilinear assessment. *Journal of Applied Psychology*, *95*(5), 862–873.

Zhou, J., & George, J. M. (2001). When job dissatisfaction leads to creativity: Encouraging the expression of voice. *Academy of Management journal*, *44*(4), 682-696.